

SHRI POOJA CHALLAGULLA

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EDUCATION

University of Arizona

Expected Dec 2026

Bachelor of Science in Computer Science and Artificial Intelligence (Dual Major), Minor in Mathematics

Future Academic Plan: Incoming PhD Student in Computer Science (Machine Learning), University of Arizona

Coursework: Machine Learning, Cloud Computing, Data Structures & Algorithms, Software Engineering, Data Science, Artificial Intelligence

TECHNICAL SKILLS

AI / ML: LLMs, RAG Pipelines, Agentic AI Workflows, Multi-Agent Systems, Prompt Engineering, NLP, TensorFlow, PyTorch, scikit-learn, LangChain, Vector Databases, Embeddings

Backend / Cloud: AWS (Lambda, S3, EC2), FastAPI, Flask, PostgreSQL, MySQL, REST APIs, Microservices, Git/GitHub

Programming: Python, SQL, Java, JavaScript, Shell Scripting, HTML, CSS

Data & Analytics: NumPy, Pandas, Matplotlib, Excel

Software Engineering: System Design, API Integration, Workflow Automation, Data Validation Pipelines, Logging & Monitoring

PROFESSIONAL EXPERIENCE

AI Systems Engineer Intern Jan 2026 – Present

McGraw Hill

- Developing an industry-partnered AI proof-of-concept for agent-driven, course-aligned learning systems using LLM-based architectures.
- Designing orchestration workflows for intelligent tutoring and content retrieval using Retrieval-Augmented Generation (RAG) pipelines, integrating graph-based RAG approaches leveraging knowledge graphs and structured relationship mapping to improve contextual reasoning and retrieval accuracy.
- Implementing structured knowledge retrieval strategies to support explainability, multi-hop reasoning, and semantic linking across educational content.
- Collaborating with faculty, researchers, and industry stakeholders to define AI system requirements, evaluation metrics, and responsible AI deployment strategies.

AI Solutions Developer Aug 2025 – Dec 2025

AWCIM Cancer Center

- Built an AI-powered RAG chatbot using vector embeddings, pgVector, FastAPI, and AWS Lambda to support oncology information retrieval.
- Designed backend microservices enabling automated document ingestion, semantic search, and contextual response generation.
- Implemented evaluation pipelines analyzing 240+ clinical response outputs to improve factual accuracy, safety, and reliability.

PROJECTS

PDF Reader with RAG Question Answering System

- Developed an end-to-end document intelligence pipeline performing chunking, embedding generation, and citation-based semantic retrieval.
- Designed REST APIs and backend services enabling scalable multi-document conversational question answering.
- Implemented retrieval quality evaluation and response validation to improve answer reliability.

Sentiment Analysis NLP Pipeline

- Built supervised machine learning models to classify textual sentiment with full preprocessing and feature engineering workflows.
- Performed tokenization, normalization, and stop-word filtering using Python NLP libraries.
- Visualized sentiment insights using statistical plots and data exploration tools.

ACHIEVEMENTS

- Dean's List with Distinction Fall 2024
- Undergraduate Teaching Assistant University of Arizona (Fall 2024)

Clubs & Organizations: Phi Sigma Rho Greek Honor Society for Women in STEM, Arizona Ramblers Hiking Club